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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/087,901	02/28/2002	Thomas W. Lanzatella	1557.012US1	4513
21186	7590	01/02/2004	EXAMINER	
SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH, P.A.			ROSS, JOHN M	
P.O. BOX 2938			ART UNIT	
MINNEAPOLIS, MN 55402			PAPER NUMBER	
			2188	

DATE MAILED: 01/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/087,901

Applicant(s)

LANZATELLA ET AL.

Examiner

John M Ross

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 July 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Information Disclosure Statement

1. The Information Disclosure Statement(s) received 28 July 2003 has been considered.

Please see attached PTO-1449(s).

Drawings

2. The drawings filed on 28 February 2002 have been approved by the Examiner.

Specification

3. Applicant is requested to update the missing serial numbers of the copending applications cited on Page 2, lines 19, 23 and 26 of the specification.

Claim Objections

4. Claims 9-10 are objected to because of the following informalities:

The meaning of the phrase “means for transmitting a freeze list having and for transmitting a frozen image” (Claim 9, lines 5-6) is unclear because the specification does not describe a freeze list as having a frozen image. It is suggested that the word “having” be deleted. The claim(s) will be interpreted in light of this suggestion.

Appropriate correction is required.

All dependent claims are objected to as having the same deficiencies as the claims they depend from.

5. Claims 3, 6 and 20 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

The claims are distinct embodiments of the methods recited in the parent claims. The parent claims fix a method in a system, whereas the child claims fix a method in a computer-readable medium.

For the purpose of examination, the claims will be interpreted as independent.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1, 3-4, 6-13, 15, 18 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haye (US 6,078,932) in view of the Webopedia internet web site as of 21 June

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2000 (available from the Internet Archive at <http://web.archive.org/web/20000621114956/http://www.webopedia.com/TERM/A/API.html>).

Haye discloses a method for creating a point-in-time backup (i.e. frozen image) of data in a system where the data may be stored across a plurality of storage devices with varying backup capabilities (i.e. freeze methods) (Column 2, line 50 to column 3, line 13).

As in claims 1, 3-4 and 6-8, the method of Haye comprises:

identifying the storage object (i.e. data collection) (Column 5, lines 26-31); and
determining the backup technology (i.e. freeze methods) appropriate for creating a point-in-time backup of (i.e. freezing) the storage object (Fig. 2, steps 38 and 40; column 5, lines 44-48), where it is readily apparent that the set of freeze methods in Haye constitutes a list.

As in claims 4 and 6, the method of Haye further comprises selecting and executing a freeze method (Fig. 2, step 42; column 5, lines 49-61).

As in claim 7, Haye discloses that the selected freeze method results in a point-in-time copy (i.e. frozen image) (Fig. 2, step 52; column 6, lines 3-8).

Haye does not teach that the method is carried out through interaction with an application program interface (API) as required by claims 1, 3, 4 and 6-8.

Webopedia teaches that an API is a set of routines, protocols and tools for building software applications, making it easier to develop a program by providing all building blocks a programmer puts together. Webopedia also teaches that an API has the advantage that all programs using the API have similar interfaces.

Regarding claims 1, 3-4 and 6-8, it would have been obvious to one of ordinary skill in the art at the time of invention by applicant to utilize an application programming interface as taught by Webopedia, to implement the method of Haye, in order to provide a similar interface to all programs utilizing the method as taught by Webopedia.

Claim 9 is rejected using the same rationale as for the rejection of claim 7 above.

Claim 11 is rejected using the same rationale as for the rejection of claim 7 above, noting that it is readily apparent in Haye that in order to identify the storage object (i.e. data collection) and freeze methods they must have a corresponding identifier, and it is also readily apparent that the data in the freeze list and frozen image must have a corresponding data structure.

Claim 12 is rejected using the same rationale as for the rejection of claim 11 above, noting that in the system and method made obvious by the combination of Haye and Webopedia the storage identifier must be transferred to the API by calling the API in order to correctly

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identify the data collection to be frozen, where it is understood that a call is merely an invocation of the services provided by the API.

Claims 8 and 10 are rejected using the same rationale as for the rejection of claims 7 and 9 above, incorporating the rationale for the rejection of claim 12 for the teaching that the storage identifier is transferred to the API, and further noting that it is well-known in the art to pass arguments (i.e. preferences) to functions of an API in order to specify optional parameters of the function.

Claims 13 and 15 are rejected using the same rationale as for the rejection of claims 11 and 12, respectively, where it is noted that Haye teaches that quiescing the storage object (i.e. data collection) is a necessary step in obtaining a point-in-time copy (i.e. frozen image) and is therefore integral to the freeze methods of claims 11 and 12 (Fig. 2, element 36; column 5, lines 32-43).

Claims 18 and 20 are rejected using the same rationale as for the rejection of claims 1 and 3, respectively, where it is again noted that Haye teaches that quiescing the storage object (i.e. data collection) is a necessary step in obtaining a point-in-time copy (i.e. frozen image) and is therefore integral to the freeze methods of claims 1 and 3 (Fig. 2, element 36; column 5, lines 32-43).

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8. Claims 2, 5 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haye (US 6,078,932) in view of the Webopedia internet web site as applied to claims 1, 4 and 18 above, and further in view of Chaudhuri (Surajit Chaudhuri, An Overview of Query Optimization in Relational Systems, 1998).

Haye and Webopedia are relied upon for the teachings relative to claims 1, 4 and 18 as above.

The combination of Haye and Webopedia does not teach a measure of quiesce strength for freeze methods as required by claims 2, 5 and 19.

The combination of Haye and Webopedia also does not teach selection of a method based on the measure of quiesce strength as required by claim 5.

Chaudhuri teaches a method for selecting an optimum execution plan from a space of execution plans where the selection is made based on the cost of each plan (Section 2, "Introduction"). The cost of a plan in Chaudhuri is analogous to a weight or strength (e.g. a quiesce strength), where these are understood to represent the relative desirability of alternative choices.

Regarding claims 2, 5 and 19 it would have been obvious to one of ordinary skill in the art at the time of invention by applicant to assign a quiesce strength as taught by Chaudhuri to

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the freeze method made obvious by the combination of Haye and Webopedia, for the purpose of ascertaining the relative desirability of alternative method choices as taught by Chaudhuri.

Regarding claim 5, it would have been further obvious to one of ordinary skill in the art at the time of invention by applicant to select a freeze method based on quiesce strength as taught by Chaudhuri, in the method made obvious by the combination of Haye and Webopedia, for the purpose of selecting an optimum method for execution as taught by Chaudhuri.

9. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Haye (US 6,078,932) in view of the Webopedia internet web site as applied to claim 13 above, and further in view of Gregg (US 5,938,786).

Haye and Webopedia are relied upon for the teachings relative to claim 13 as above.

The combination of Haye and Webopedia does not teach the transmission of a signal upon completion of a quiesce operation as required by claim 14.

Gregg teaches a system comprising a communications handshake between two components of the system where the first component sends a signal to the second component requesting that the second component perform a quiesce operation, and the second component responds with a signal upon completion of the quiesce (Fig. 8; column 8, lines 42-50), where it is

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readily apparent that such a handshake maintains an orderly execution of operations in the system.

It would have been obvious to one of ordinary skill in the art at the time of invention by applicant to transmit a signal upon completion of a quiesce operation as taught by Gregg, in the system made obvious by the combination of Haye and Webopedia, for the purpose of maintaining an orderly execution of operations in the system.

10. Claims 16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haye (US 6,078,932) in view of the Webopedia internet web site as of 21 June 2000 (available from the Internet Archive at <http://web.archive.org/web/20000621114956/http://www.webopedia.com/TERM/A/API.html>) and Gregg (5,938,786).

Regarding claims 16-17, the rationale derived from Haye and Webopedia in the rejection of claim 7 above is incorporated herein for the teaching of a means for receiving data identifying a storage object, and means for means for transmitting a freeze list with one or more freeze methods appropriate for freezing the storage object.

Regarding claims 16-17, the rationale derived from Haye in the rejection of claim 13 above is incorporated herein for the teaching that quiescing the storage object is a necessary step in obtaining a frozen image and is therefore integral to the freeze method of claim 7.

Regarding claim 17, the rationale derived from Haye and Webopedia in the rejection of claims 8 and 10 is incorporated herein for the teaching that the storage identifier and preferences are transferred to the API.

The combination of Haye and Webopedia does not teach the transmission of a signal upon completion of a quiesce operation as required by claims 16-17.

Gregg teaches a system comprising a communications handshake between two components of the system where the first component sends a signal to the second component requesting that the second component perform a quiesce operation, and the second component responds with a signal upon completion of the quiesce (Fig. 8; column 8, lines 42-50). It is noted that such handshakes are well known in the art for the purpose of maintaining a deterministic order of operations in a system.

Regarding claims 16-17, it would have been obvious to one of ordinary skill in the art at the time of invention by applicant to transmit a signal upon completion of a quiesce operation as taught by Gregg, in the system made obvious by the combination of Haye and Webopedia, for the purpose of maintaining a deterministic order of operations in the system.

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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John M Ross, whose telephone number is (703) 305-0706. The examiner can normally be reached on M-F 8:00 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mano Padmanabhan can be reached on (703) 306-2903. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.


JMR


12/29/03

MANO PADMANABHAN
SUPERVISORY PATENT EXAMINER
TC2102